

WHAT IS CLAIMED IS:

1. An optical disc apparatus which applies a light spot to an optical disc, thereby to record or reproduce information on or from the optical disc, comprising:

    first moving means for moving the light spot applied to the optical disc, in a radial direction of the optical disc;

    an optical head having converging means for converging the light spot on the optical disc;

    spot position detection means for generating a spot position signal which indicates a positional difference in a radial direction of the optical disc, between a center of the optical head and the light spot on the optical head;

    first control means for subjecting the spot position signal to a first processing by a spot position loop filter, and outputting the spot position signal to the first moving means;

    second moving means for moving the optical head in a radial direction of the optical disc;

    second control means for subjecting the spot position signal to a second processing by a traverse loop filter, and outputting the spot position signal to the second moving means; and

    system operation control means for operating the first control means, and thereafter operating the second control

means.

2. An optical disc apparatus which applies a light spot to an optical disc, thereby to record or reproduce information on or from the optical disc, comprising:

first moving means for moving the light spot applied to the optical disc, in a radial direction of the optical disc;

an optical head having converging means for converging the light spot on the optical disc;

spot position detection means for generating a spot position signal which indicates a positional difference in a radial direction of the optical disc, between a center of the optical head and the light spot on the optical head;

first control means for subjecting the spot position signal to a first processing by a spot position loop filter, and outputting the spot position signal to the first moving means;

second moving means for moving the optical head in a radial direction of the optical disc;

second control means for subjecting the spot position signal to a second processing by a traverse loop filter, and outputting the spot position signal to the second moving means;

spot position signal monitoring means for receiving the

spot position signal as an input, and outputting a first signal which indicates that the spot position signal comes to a value smaller than a prescribed value; and

system operation control means for operating the first control means when the first signal is input, and operating the second control means after or simultaneously with the operation of the first control means.

3. An optical disc apparatus which applies a light spot to an optical disc, thereby to record or reproduce information on or from the optical disc, comprising:

first moving means for moving the light spot applied to the optical disc, in a radial direction of the optical disc;

an optical head having converging means for converging the light spot on the optical disc;

spot position detection means for generating a spot position signal which indicates a positional difference in a radial direction of the optical disc, between a center of the optical head and the light spot on the optical head;

correction signal generation means for receiving the spot position signal as an input, and generating a correction signal for correcting the spot position signal;

subtracting means for subtracting the correction signal from the spot position signal;

second moving means for moving the optical head in a radial direction of the optical disc; and

second control means for subjecting an output from the subtracting means to a processing by a traverse loop filter, and outputting the output to the second moving means.

4. An optical disc apparatus which applies a light spot to an optical disc, thereby to record and reproduce information on or from the optical disc, comprising:

first moving means for moving the light spot applied to the optical disc, in a radial direction of the optical disc;

an optical head having converging means for converging the light spot on the optical disc;

spot position detection means for generating a spot position signal which indicates a positional difference in a radial direction of the optical disc, between a center of the optical head and the light spot on the optical head;

second moving means for moving the optical head in a radial direction of the optical disc;

second control means for subjecting the spot position signal to a processing by a traverse loop filter, and outputting the spot position signal to the second moving means; and

a coefficient multiplier for reducing a coefficient for

the control by the second control means to a value smaller than that in a normal operation time, at starting of the operation of the second control means.

5. The optical disc apparatus of Claim 1 or 2 wherein the first processing subjected by the first control means is a phase-lag compensation.
6. The optical disc apparatus of Claim 5 wherein the first processing subjected by the first control means includes compensation for reducing an open-loop gain at a primary resonance frequency of the first moving means, in addition to the phase-lag compensation.
7. The optical disc apparatus of Claim 1 or 2 wherein the first processing subjected by the first control means is a phase-lead compensation and a phase-lag compensation, and the phase-lead compensation is started from a frequency lower than a primary resonance frequency of the first moving means.
8. An optical disc apparatus which applies a light spot to an optical disc, thereby to record or reproduce information on or from the optical disc, comprising:

first moving means for moving the light spot applied to the optical disc, in a radial direction of the optical disc;

an optical head having converging means for converging the light spot on the optical disc;

spot position detection means for generating a spot position signal which indicates a positional difference in a radial direction of the optical disc, between a center of the optical head and the light spot on the optical head;

tracking error detection means for generating a tracking error signal which indicates a positional dislocation between the light spot and a track on the optical disc;

first control means for subjecting the spot position signal or the tracking error signal to a first processing by a phase compensation loop filter, and outputting the signal to the first moving means;

second moving means for moving the optical head in a radial direction of the optical disc;

second control means for subjecting the spot position signal to a second processing by a traverse loop filter, and outputting the signal to the second moving means; and

system operation control means for operating the first control means to perform a phase-lag compensation and a phase-lead compensation by the phase compensation loop

filter to the spot position signal, thereafter switching the spot position signal to the tracking error signal to perform the phase-lag compensation and the phase-lead compensation to the tracking error signal, and operating the second control means after operating the first control means.